Poseidon 1 – HD G-Compensated OCXO

bliley technologies

FEATURES

- ✓ 0.020 PPB/G acceleration sensitivity
- ✓ -120 dBc/Hz phase noise @ 10Hz
- ✓ ruggedized packaging
- ✓ heavy duty isolation
- ✓ 65 Hz shear and axial mode isolation

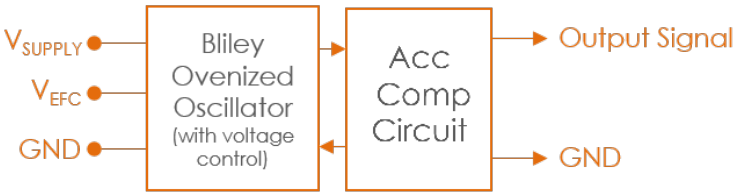
HD G-Compensated OCXO

#blileytakesyoufurther

Description

The Poseidon Series is specifically designed for very harsh high vibration environments where dynamic phase noise performance is paramount. The active compensation and passive isolation provide up to 100x improvement in acceleration sensitivity over standard oscillators.

Block Diagram



Part Number Configuration

POS1 – OBB - __ M ___ - ____ A

Center Frequency
5 to 160 MHz

Supply Voltage
F: +12 Vdc
G: +15 Vdc

EFC
N: N/A
A: ±0.5 ppm
B: ±1.0 ppm

Frequency vs Temperature
E: ±50 ppb*
F: ±100ppb
H: ±250 ppb

Operating Temperature
A: 0 to 70°C
B: -20C to 70C
C: –40C to 85C

Output Type
A: Sine

NOTE
* Frequency < 50 MHz

MADE IN AMERICA

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Performance Specifications

Parameter	Conditions	Values			Unit
Input Characteristics		MIN	TYP	MAX	
Frequency Range		5	10	160	MHz
Initial Tolerance	@ +25°C±1°C			±0.25	ppm
Warm Up Time	To initial tolerance			5	Min
Frequency Stability					
vs. Temperature	See Options (Max) Referenced to +25°C		±50, ±100, ±250		ppb
vs. Load	± 10% Δ in Load		±5.0		ppb
vs. Supply Voltage	± 5% Δ in supply		±5.0		ppb
ADEV (Short Term Stability)	T = 1 second		5E-12		
Aging	After 30 Days Operation				
Per Day	MIL-PRF-55310			±1.0	ppb
1st Year	MIL-PRF-55310			±100	ppb
Supply Voltage	Option F	11.4	12	12.6	Vdc
	Option G	14.25	15	15.75	Vdc
Power Dissipation					
Start-up	Tested at 25°C		7.0		W
Steady-state	Tested at 25°C		3.0		W
Electronic Frequency Control					
Voltage Range		0	2.5	5	Vdc
Frequency Range	See Options (Min)	±0.5, ±1			ppm
Slope			positive		
Input Impedance			100		kΩ
Linearity			10		%

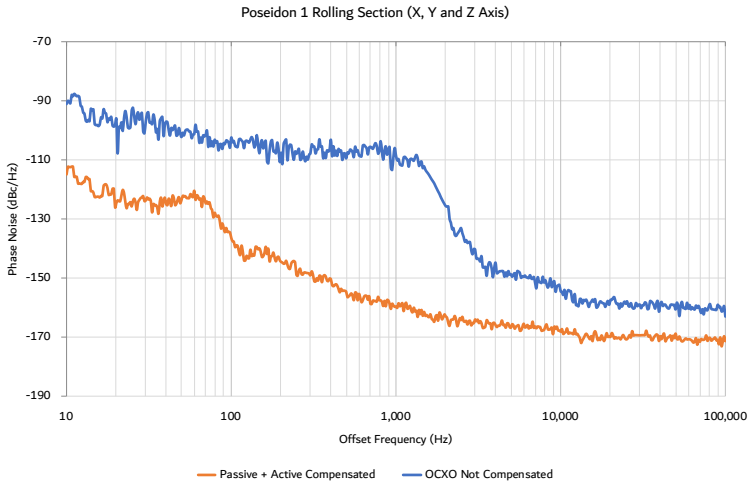
Note: Values typical of 10 MHz units

Performance Specifications

Parameter	Conditions	Values			Unit
Output Characteristics (Sinusoidal)		MIN	TYP	MAX	
Output Level			10.0		dBm
Harmonics				-30	dBc
Load Impedance		45	50	55	Ω
VSWR	Into 50 Ω		2:1		

Parameter	Conditions	Values	Unit
Dynamic Phase Noise		TYP	
Phase Noise (10 MHz)	Tested at 25C		
	10Hz	-120	dBc/Hz
	100Hz	-127	dBc/Hz
	1000Hz	-160	dBc/Hz
	10kHz	-165	dBc/Hz
	100kHz	-165	dBc/Hz

Estimated dynamic phase noise performance (10 MHz)



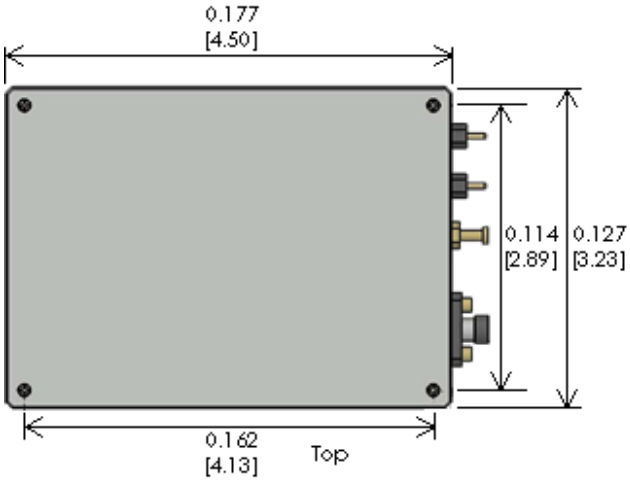
Vibration profile:
DO-160 Curve C (Random Vibration)

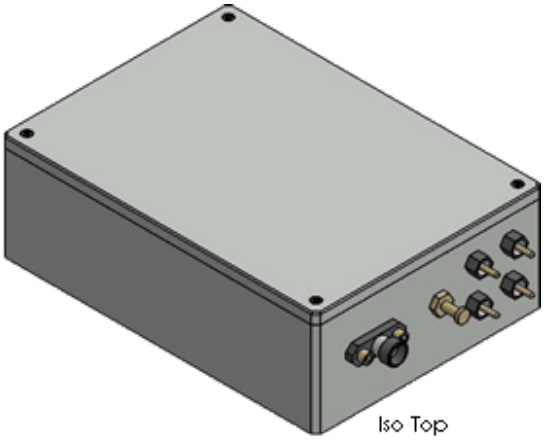
Environmental Compliance

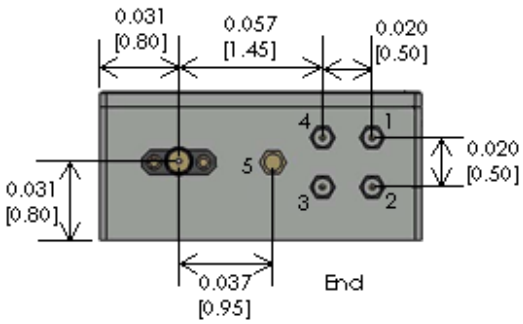
Parameter	Conditions	Values			Unit
Environmental & Reliability		MIN	TYP	MAX	
Operating Temperature	Option A	0		70	°C
	Option B	-20		70	°C
	Option C	-40		85	°C
Storage Temperature		-55°C		95	°C
Shock	MIL-STD-202 Method 213, Test Condition A	Survive			
Sinusoidal Vibration	MIL-STD-202 Method 204, Test Condition B	Survive			
Random Vibration	RTCA DO-160	Survive			
MTBF	Calculated using MIL-HDBK-217	153,300			Hrs
Acceleration Compensation 3 axis Performance	10 MHz output Vibration profile: 0.001G2/Hz 10Hz to 2kHz		0.020		ppb/g

Note: Values typical of 10 MHz units

Physical Specifications







PIN	FUNCTION
SMA	RF Output
1	EFC
2	+Vdc
3	RF & Case Ground
4	N/C
5	N/C

Tolerances (mm) .X = ± 0.5, .XX = ±0.2 unless otherwise specified

RoHS COMPLIANT

AS9100:2016
ISO 9001:2015
CERTIFIED

REACH COMPLIANCE

Notes:
- None